

REMARKS

Reconsideration and allowance are respectfully requested in light of the above amendments and the following remarks.

I. 35 USC § 112

Claims 1-4 stand rejected under 35 USC § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim that which is considered the invention. The Office Action asserts certain phrases lack proper antecedent basis. In response, claims 1 and 3 have been amended.

II. 35 USC § 103

Claims 1, 2 and 5 stand rejected under 35 USC § 103(a) as allegedly being unpatentable over JP 2000211008 in view of Lin (U.S. Patent No. 5,552,011), optionally in further view of Schut et al. (U.S. Patent No. 6,376,058), and claims 3 and 4 are rejected under 35 USC § 103(a) over the same references in further view of Tunashima et al. (U.S. Patent No. 6,1226,915).

However, as expressed in the present claims, the present invention has at least two important features neither taught nor suggested by the cited art or any combination thereof.

The first is that the inorganic master batch (M_1B) is prefabricated, in particular, the inorganic powder is blended with polypropylene (the primary raw material) to reach the required dispersion in advance of entering the extruder. This step has the advantage of prolonging the period before which the filter screen of the extruder needs to be changed during the subsequent extrusion process. Thus, by prefabricating the master batch to the desired dispersion in advance, the production output can be increased.

Because the inorganic power is unsteady in the dispersion while blended with the polypropylene, especially when the production rate of the extruder is increased, the unsteady mixture of inorganic powder and polypropylene will adhere to the filter screen of the extruder, requiring more frequent replacement of the filter screen. Because replacement of the screen requires stopping of the extrusion process, limiting the adherence of the material to the filter screen can increase production rates.

Additionally, conventional manufacture of pearly synthetic paper has pores and air spots resulting in poor product quality. These issues are caused by the presence of moist inorganic powder during the extrusion process. In contrast, the presently claimed

invention prefabricates the master batch (M₁B) from the inorganic powder to reach the required dispersion in the polymer in advance to solve these problems.

The second important feature neither taught nor suggested by the cited references is the utilization of a double-screw primary extruder with an air drawing device (e.g., claims 2 and 5) to increase the blending effect to the composition and continuously extrude the composition to the middle path of the T-type die.

Because the dispersion of the master batch is achieved in advance, the extruder may be operated at its maximum rotational velocity and maximum extrusion output. Thus, the presently claimed invention is able to increase the production output of conventional processes up to two times.

Additionally, the claimed invention, inter alia, utilizes a pair of first extruders, each being single-screw extruders, into which the polypropylene and optionally polyethylene (0 to 30 wt%), and separate master batches of each of calcium carbonate and titanium dioxide are fed. This composition is processed by evenly stirring the composition in the feeder before mixing in each of the single-screw extruders.

No similar description can be found in any of the cited references. The Office Action points to Paragraph [0006] of JP

'008 for its discussion of the extruder equipment used therein. However, in the reference the various components are added directly to a twin-screw main extruder and then pushed through a T-die to form the upper and lower layers of the synthetic paper, and the product is then joined to the extruded paper-like layer. Nowhere in the description of the "extruder equipment" of JP '008 is described the claimed steps of evenly stirring in feeders at the front ends of two separate single-screw extruders the components as recited. Thus, the primary reference neither teaches nor suggests evenly stirring the composition with feeders at the front ends of two separate single-screw extruders to process the components of the composition.

Thus, as neither Lin or Schut et al. teach, suggest nor motivate one of ordinary skill in the art to modify JP '008 to evenly stir the components in feeders at the front end of single-screw extruders, and as the '008 reference only teaches uses of twin-screw main extruders without stirred feeders, Applicant respectfully submits a prima facie obviousness has not been established. Thus, Applicant respectfully requests reconsideration of claims 1, 2 and 5.

Additionally, as Tunashima et al. fails to cure the deficiencies of JP' 008, Lin and Schut et al., Applicants

respectfully request reconsideration of the rejection of claims 3 and 4.

Claims 2 and 5 additionally recite the feature that "the single-screw second extruder has an air-drawing device and the double-screw primary extruder has a sleeve air-drawing device." However, the cited references do not disclose or suggest such a feature. Reconsideration of the rejection of claims 2 and 5 is respectfully requested.

III. Conclusion

In light of the foregoing, entry of the above-amendments is respectfully requested. It is additionally submitted that the application is in condition for allowance, and a notice to that effect is respectfully solicited.


If any issues remain which may be best resolved through a telephone communication, the Examiner is requested to telephone the undersigned at the local Washington, D.C. telephone number listed below.

Respectfully submitted,



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